

REMARKS

Claims 1 and 4 – 13 are pending in this application. Claims 1 and 4 – 13 have been rejected.

Claim 11 was rejected under 35 U.S.C. 112, second paragraph. The dependency of claim 11 has been amended so that it no longer is dependent upon a cancelled claim. Accordingly, it is respectfully requested that the Examiner withdraw the rejection of claim 11 under 35 U.S.C. 112, second paragraph.

Claims 1 and 4 – 13 were rejected under 35 U.S.C. 112, first paragraph. Claim 1 has been amended so that the reactive hot melt adhesive is a polyurethane reactive hot melt adhesive. Accordingly, it is respectfully requested that the Examiner withdraw the rejection of claims 1 and 4 – 13 under 35 U.S.C. 112, first paragraph.

Claims 1 and 4 – 13 were rejected as unpatentable under 35 U.S.C. 103(a) over U.S. Patent No. 5,342,873, issued to Merz, in view of U.S. Patent No. 3,959,219, issued to Aoyama or U.S. Patent No. 4,632,951, issued to Fuhr, or U.S. Patent Nos. 4,616,044, 4,652,485 and 4,654,105, issued to Fesman, each in view of U.S. Patent No. 5,331,040, issued to Lee. Merz discloses a reactive hot melt adhesive and includes flame retardants in a lengthy list of possible additives to such adhesive. However, there is no teaching or suggestion whatsoever in Merz of which flame retardants may be included in reactive hot melt adhesive to provide flame retardancy.

Aoyama discloses a thermoplastic resin that has reduced flammability. There is no teaching or suggestion in Aoyama that the flame retardants of Aoyama may be utilized with a polyurethane reactive hot melt adhesive. Specifically, polyurethane is not included on the lengthy list of resins with which the flame retardants would be useful. The sole reference to urethane in Aoyama is that a certain urethane may be useful as a part of the structure of the flame retardant itself, but not as part of the resin. Further, while Aoyama discloses a thermoplastic material, the reactive hot melt adhesive of the present invention provides a thermoset material after cure. One skilled in the art would not be led to the present invention via a generic disclosure of flame retardants without any teaching that any such retardants may be utilized in a polyurethane reactive hot melt composition.

Fuhr discloses flameproofing additives for plastics consisting of coating and carrying materials. The flame retardant only is workable with a coating of metal oxide. As shown in Fuhr's comparative example, the flame retardant does not meet UL standards without the metallic coating. One skilled in the reactive hot melt adhesive field would not be led to the present invention via a teaching of the necessity of a metal oxide coating in the flame retardant.

The three Fesman patents each disclose a polyether urethane foam that may optionally contain a halogenated flame retardant. A critical component of the foam of Fesman is an

organophosphorous additive. Such an additive would be unworkable in a reactive hot melt adhesive to achieve flame retardancy because it would change various critical properties, such as the viscosity and green strength, of the adhesive. Further, in order to produce the foam of Fesman blowing agents are added to the composition. It is known in the art that a blowing agent provides flame retardancy to a material. Thus, one skilled in the art would not be led to the present invention via Fesman because an organophosphorous additive would not be workable in a polyurethane reactive hot melt adhesive and the use of a blowing agent in the foam would provide different flame retardancy issues than those of a non-foam material.

Lee discloses a latex adhesive containing a functional filler material. Latex adhesives are substantially different than polyurethane hot melt adhesives such as that of the present invention. For example, unlike polyurethane adhesives latex adhesives have water as a carrier. Thus, it would not be obvious for one skilled in the art to develop a hot melt adhesive based on the teaching of a latex water based adhesive.

In conclusion, there are substantial differences between the cited references and the present invention, a lack of motivation to combine the references, and any combination of the references would not result in a polyurethane reactive hot melt adhesive having flame retardant properties such as that of the present invention. Accordingly, it is respectfully submitted that claims 1 and 4 – 13 as amended are patentable under 35 U.S.C. 103(a) over Merz, in view of Aoyama, Fuhr or Fesman and further in view of Lee.

In view of the foregoing, it is respectfully submitted that the present application is in condition for allowance. If there are any issues that the Examiner wishes to discuss, he is invited to contact the undersigned attorney at the telephone number set forth below.

Respectfully submitted,



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October 8, 2003